PROPOSED BRIDGE OVER THE RHINE AT COLOGNE.

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In the spring of the present year, the Prussian Government publicly stated their desire to obtain designs from engineers and architects of every nation for the construction of a bridge over the Rhine, at Cologne, to carry a railway as well as the ordinary road and footways, from Cologne to Deutz, on the eastern bank of the river. The designs were restricted by certain conditions, of which the expense of the proposed construction was a prominent feature.

In August last, 62 designs were sent in to the Board of Public Works in Berlin, many of them being from England. The Royal Commission appointed to examine these designs rejected 41 in the first instance, as more or less inapplicable to the required conditions; and on further examination seven more were set aside from the same cause. The remaining 14 were then subjected to additional scrutiny, and three were selected for final preference. Of the three thus selected two, as we have already mentioned, were eventually adjudged deserving of the prizes, being the design presented by Mr. J. W. Schwedler, architect, of Berlin, and the design by Capt. W. Moorsom, civil engineer, of London. Of the latter of these we now give a view and the following particulars:—

	Feet.
The length of the bridge across the water is	1,275
,, of the approaches and land arches	740
Total length of the bridge and approaches	2,015
Span in the clear of each of the two main arches	600
,, ditto of the lifting arch	100
Breadth of roadway for carriages over the bridge	25
,, of railway for double track over do.	25
,, of two footways on the upper floor	13
Width of piers in the river, two, each of	35
Height from the bed of the river to the underside of the lowest part of each arch	50
,, from the bed of the river to the underside of the lifting arch when raised	104
,, from foundations to the top of the towers	147
	Tons.
Strength of each main arch to resist a load distributed over it	5,750
Cost of the whole of the works excepting the basement and foundations of the towers in the river	£211,240
Cost of the basement and foundations in the river, which the Government propose to execute themselves	25,540
Total cost if executed at Prussian prices	£236,780

If executed in England the cost would be one-fifth less.

The scale of the drawing is 300 feet to one inch.

The girders are simple repetitions of iron bars (rolled): and Capt. M.'s proposal to the Prussian government (which is still under consideration) is, to build one centre tower and one shore tower first, and place temporary scaffolding in the river between these, leaving the other part of the river open. The stages supported on this scaffolding are said to be ample for constructing the girder, which is previously fitted (but not rivetted) on the shore, and each piece marked. Capt. M. has found that 75*l.* is the cost of scaffolding for a girder of this kind, 160 feet long and 40 feet high, above *dry* ground; and 300*l.* is the cost of ditto for a girder, 220 feet long and 80 feet high, above a river 9 feet deep.

MONSTER GASOMETER.—A large gasometer is being constructed at Philadelphia, in a telescopic form, with two sections. The dimensions are 140 feet diameter, and 70 high, and calculated to contain 1,000,000 cubic feet.

THE CLAIMS OF THE GEOMETRICAL TO BE CONSIDERED A DISTINCT STYLE.

AT the annual autumn meeting of the Architectural Society, Northampton, a paper "On the Progressive Development of Geometrical Tracery, and on the claims of the Geometrical to be treated as a distinct Style," was read by the Rev. G. A. Poole; the object of which was to prove that there is such a generic difference between that style and the Early English and Decorated on either hand that it ought to have a distinct place in an architectural system, and a distinct name in architectural nomenclature.

The writer said,—It is at once apparent that the styles of Gothic architecture are arranged very much with reference to the character of the windows. Right or wrong, this is the case; and right it certainly is in the sense of being obvious and convenient; though it might perhaps have been expected that some more organic part of the structure might have afforded the characteristics of style.

What do we see, if we follow the forms of windows during the last half of the 13th and the first half of the 14th century? We see them gradually deserting the narrowness and simplicity of the lancet form, till, at last, they have arrived at a great variety and complexity, involving proportionate width of opening, and the subordination of many parts. We see, in a word, a wide opening filled with mullions and tracery. And this tracery is composed, at first, of geometrical figures, following certain laws, and afterwards of figures no longer geometrical, and, though not without law, yet of that free flowing contour which looks, at least, without restraint. Now, I think you will agree with me, that the first change and the last—the change from Early English to Geometrical, and the change from Geometrical to flowing Decorated—both demand to be treated as the differentials of a style; the first, that is, the mere introduction of tracery, as being, so far as windows are concerned, more important than the difference between Norman and Early English; the latter, the change of the laws which govern the formation of tracery, as being at least as important as any difference which separates Perpendicular from Decorated. In other words, Geometrical is more unlike Early English than Early English is unlike Norman; and so, *ex abundanti*, Geometrical and Early English should be separated: and, again, Geometrical is as unlike flowing Decorated, as flowing Decorated is unlike Perpendicular; and therefore, if the two latter should be distinguished, so also should the two former.

And yet the geometrical is almost always treated as transitional (which indeed every style but the first and last must be, in some sense; but I mean that this is so treated as transitional, as if it had no claim to a name and station of its own): it gets no better title than late Early English or Early Decorated, as the case may be; the term geometrical being only adjected to the generic term Decorated, as marking, not a genus, but a variety. If this had no practical result it would be little worth contending about, but I believe that it really does result in the too great neglect of this style, as a model, and, at the least, a point of departure for modern practice. A style which deserves, but does not obtain, a substantive position, is sure to be defrauded of more substantial proofs of the estimation in which it ought to be held. • • •

The first impression conveyed by a Geometrical window and a flowing Decorated window side by side is, that while the former is obviously drawn only with the compasses, the latter seems at least to be drawn in some degree *libera manu*. Perhaps this impression, so far as the flowing Decorated is concerned, is hardly correct; but you will presently see that it results from certain appreciable causes, and indicates a real difference of principle in design. Take the simple geometrical and an equally simple flowing two-light window. The eye at once detects the use of the compasses in the one, and the very centres from which the curves are struck: in the other no single curve is sufficiently simple to be referred, except with considerable effort, to its centre or centres: it seems, indeed, to be drawn without any mechanical aid. Take more complex arrangement, and still the same character is found carried out through three, four, five, six, seven, eight, nine lights. This alone, as it seems to me, is sufficient to demand a separation of the two styles; for, in speaking of design, this very fact, that the designer is put into so different an attitude as that of one who is limited wholly to geometrical forms, and of another who allows himself, or seems to allow himself the license almost of a sketch, is surely enough to separate between them.

But the free hand of the later designer had its rules too, and these rules were opposite to those of his predecessors, and this is really the differential which I shall propose. In designing a geometrical window the architect adhered to true circles, or to parts of true circles, never flowing off into another curve, struck from another centre. The ogee was unknown. Cusps, besides a characteristic so remarkable that I must refer to it, though parenthetically (*i.e.*, besides being *let into the soffit* instead of being *taken out of the chamfer*,—besides this, cusps) were of circles, or parts of circles, struck from circles within the greater circle, independent of one another, but with absolute dependence on the centre of the first circle: these points were cut off by another circle, concentric with the first, or that which circumscribed the whole figure. Hence a transparency of purpose and a precision of effect in this style never afterwards attained. All is complete in itself, and each member perfect, either as a part or as a whole,—a character which Professor Whewell abundantly recognises when he calls the Geometrical complete Gothic. • • •

For the generic term, or that including the whole of that tracery which is formed of circles or parts of circles, secants and tangents of one another, but never flowing into one another, we cannot hesitate in taking that commonly in use, *i. e.*, geometric. To supply names for its two subdivisions is not so easy. It is now some six months past that I endeavoured to do this, in an article in the *Archæological Journal*, where I ventured to suggest the terms Concentric and Excentric to express the opposite characters of the two divisions. The first, you will observe, is of patterns formed of circles, or parts of circles, all the centres of which are within the resulting figure; and, as the figures are all uniform, even the subordinate parts must be repeated with the same necessary relation to the general centre. Thus, in a circle enclosing six other circles, grouped around a seventh (as at Grantham), the centre of the seventh is the same as the centre of the containing circle, and the centres of the six others all lie in the circumference of another circle drawn from the same general centre. All form one system, bound by a sort of centripetal force to one centre. The term CONCENTRIC is, therefore, at least, intelligible, as applied to this variety of geometrical tracery.

The other variety is formed by a combination of curves, some of which are struck from centres without the resulting figures; and, if the window be sufficiently complex, these other centres fall within other patterns in the same window, giving, by a centrifugal influence, to the curves to which they belong, a place in another system with another centre. And the term EXCENTRIC seems sufficiently appropriate to this development of tracery to this group of architectural comets. We have, therefore, —*Geometric* for the whole style, and *Concentric* and *Excentric* for its two varieties. • •

Directly, or by inference, I find others

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